

CLAIMS:

1. A retractable strap device for a carry case, which comprises:
 - a) a flexible strap having at least first and second end portions; and
 - b) at least one first strap retractor device mounted to at least a first part of
- 5 said carry case, said strap retractor device including resilient means respectively attached to a first portion of said strap to bias said strap toward a retracted position with respect to said carry case, and a second portion of said strap opposed to said first portion being attached to a correspondingly opposed second part of said carry case.
2. The retractable strap device according to Claim 1, further comprising means
- 10 associated with said retractor device for take-up and storage of at least a portion of said strap.
3. The retractable strap device according to Claim 2, further comprising at least a second strap retractor device mounted to said second part of said carry case, said second portion of said strap being attached to said second strap retractor device.
- 15 4. The retractable strap device according to Claim 3, wherein said second strap retractor device includes resilient means attached to said second portion of said strap, and means is provided therein for take-up and storage of at least a portion of said strap.
5. The retractable strap device according to Claim 4, wherein each said resilient means in each said retractor device comprises at least one coil-type extension spring.
- 20 6. The retractable strap device according to Claim 5, wherein each said resilient means in each said retractor device comprises at least two coil-type extension springs.
7. The retractable strap device according to Claim 6, wherein each said resilient means in each said retractor device comprises at least three coil-type extension springs.

8. The retractable strap device according to Claim 6, wherein each said retractor device comprises a housing and each said resilient spring is retained within said housing, each said spring having a first end fixed to said housing and a second end fixed to a slider device, said slider device adapted to selectively take-up and extend said strap in response to forces applied to said strap.

9. The retractable strap device according to Claim 8, wherein each end of said strap is attached to a respective slider device, and each said slider device is attached to said resilient springs, each said slider device defining an aperture for passage therethrough of said strap, such that when said strap is extended in a direction away from said carry case, said resilient means is extended, and when said strap is relaxed, said resilient means retracts and causes said strap to retract and be stored within said housing.

10. The retractable strap device according to Claim 9, wherein each said retractor housing includes a fixed elongated member oriented transversely to said strap, and each said first and second end portions of said strap is respectively attached to a respective elongated member attached to a respective housing.

11. The retractable strap device according to Claim 10, wherein each end portion of said strap is respectively wrapped around said associated fixed elongated member within said associated housing and looped through said aperture in said respective slider device for storage of at least a portion of said strap within each said respective housing.

12. The retractable strap device according to Claim 11, wherein each said slider device associated with each said housing defines two apertures for reception of each respective end portion of said strap in a double looped manner to thereby increase the amount of strap storage capacity within said housing.

13. The retractable strap device according to Claim 12, wherein each said housing includes resilient means positioned to be engaged by said slider device to absorb and store energy when said strap is extended to a position which causes said slider device to reach a predetermined location.

5 14. The retractable strap device according to Claim 13 wherein each said housing forms at least a part of a frame structure for said article of luggage and is concealed within a part of said carry case.

15. The retractable strap device according to Claim 14 further comprises a locking device adapted to prevent said carry strap from sliding movement relative to said retractor
10 device.

16. The retractable strap device according to Claim 15 wherein said locking device comprises a first slotted block and a second slotted block, said carry strap passing through both said slotted blocks, at least one of said blocks being movable laterally with respect to the other to lock the position of said carry strap at a selected location on said strap to
15 prevent further movement of said strap into said respective retractor device.

17. A retractor strap device for a carry case such as a business case, luggage or the like, which comprises:

a) a housing mounted on at least one side of said carry case and forming part of the framework structure of said carry case, said housing being subdivided into at least
20 two sections, a first section associated with one end portion of a carry strap, and a second section associated with a second end portion of said carry strap;

b) a resilient device positioned in each of said sections of said housing and having one end fixedly attached to said housing and a second end attached to a slider

device, each said slider device being attached to respective opposed portions of said carry strap, each said slider device defining an opening for reception of a portion of said carry strap; and

5 c) an elongated member fixedly attached to each section of said housing and oriented transverse to said carry strap, said elongated member being spaced from said respective slider device, said elongated member being positioned to wrap a portion of said strap therearound such that applying opposed forces to said respective end portions of said carry strap causes said carry strap to extend its exposed length as said resilient devices become extended, and releasing said opposed forces on said carry strap permits said
10 resilient device to apply inward and opposed resilient forces to said end portions of said carry strap to cause said opposed portions of said carry strap to return to their stored positions within said housing.

18. The retractable strap device according to Claim 17, wherein said resilient device comprises coil-type extension springs.

15 19. The retractable strap device according to Claim 18, wherein each said first and second sections of said housing includes at least two coil-type extension springs.

20. The retractable strap device according to Claim 19, wherein each said first and second sections of said housing includes at least three coil-type extension springs.

21. A retractable strap device for a carry case, which comprises:

20 a) a housing mounted on each side of said carry case and forming part of the frame structure of said carry case; and

b) at least one coil-type torsion spring mounted within each said housing and adapted to cause two opposed end portions of a carry strap to be retracted within said

housing when said spring retracts, and to permit said end portions of said carry strap to be extended in directions opposed to said spring when extension forces are applied to each end of said carry strap.

22. A retractable strap device for an article carrying case such as an article of luggage or the like, which comprises:

a) a flexible strap having a central portion and at least first and second end portions;

b) at least one first strap retractor device mounted on at least one first side of said carry case, said strap retractor device having a housing and at least two resilient coil-type extension springs attached at one end thereof to said housing, and at another end thereof to one end portion of said flexible strap; and

c) at least one second strap retractor device mounted to at least one second side of said carry case, said second side being opposed to said first side, said second strap retractor device having a housing and at least two resilient coil-type extension springs attached at one end thereof to said housing, and at another end thereof to said second end portion of said flexible strap;

whereby said first and second end portions of said flexible strap are retracted into said each respective housing by inward forces provided by said resilient springs, and when outward forces are applied to said flexible strap to cause said first and second end portions to move away from said retractable devices, said springs become extended so as to permit outward movement of said strap away from said carrying case, while providing resilient return force to said strap, such that when said outward forces are removed, each said end portions of said flexible strap returns to a stored position within each respective

housing and said central portion of said strap between said opposed end portions assumes a position closer said carrying case.

23. The retractable strap device according to Claim 22, wherein each said housing is an elongated member having at least three sides, a first side having devices to attach one
5 end of each said springs thereto.

24. The retractable strap device according to Claim 23, wherein said first side is shorter than said second and third sides.

25. The retractable strap device according to Claim 24, wherein said strap retractor device includes a slider device attached to the opposite ends of said springs, and one end
10 of said flexible strap is attached to said slider device.

26. The retractable strap device according to Claim 25 where an elongated pin is attached to each said housing and oriented in a direction transverse to the direction of movement of said flexible strap, said strap being looped around said pin and through an aperture in said slider device, and thereafter exiting said housing such that outward forces
15 applied to said strap cause said strap to exit said housing against the forces provided by said springs, and relaxation of said outward forces causes said springs to return to their unloaded condition, and said end portions of said strap to return to a stored and wrapped position within each said housings.

27. The retractable strap device according to Claim 26, wherein each said slider
20 device defines two apertures to receive said flexible strap in a double-wrapped arrangement.

28. The retractable strap device according to Claim 27, wherein said housing is made of a plastic material.

29. The retractable strap device according to Claim 28, wherein said plastic material is polypropylene or acrylonitrile-butadiene styrene.

30. The retractable strap device according to Claim 29, wherein said slider device comprises a pair of engagement pads at each end thereof, and said housing includes a pair
5 of impact springs positioned and adapted to be engaged by said pads when said slider device is moved to a predetermined position, whereby said impact springs absorb and store energy from each said slider device when said flexible strap is extended away from said carrying case to a predetermined position.

31. The retractable strap device according to Claim 30, wherein said flexible strap
10 extends through a strap locking device, said locking device comprising a first fixed block and a second slider block movable between a first position which permits passage of said strap through respective apertures in said blocks, and a second position of misalignment of said apertures which prevents passage of said strap through said block.

32. The retractable strap device according to Claim 31, wherein said slider block is
15 manually actuable by a manually operable pin attached thereto.

33. A carry case having a retractable strap device, which comprises:

- a) an article carrying case;
- b) a flexible strap having at least first and second end portions;
- c) at least one first strap retractor device mounted to at least a first part of

20 said carry case, said strap retractor device including resilient device respectively attached to a first portion of said strap to bias said strap toward a retracted position with respect to said carry case, and a second portion of said strap opposed to said first portion being attached to a correspondingly opposed second part of said carry case.

34. The carry case according to Claim 33, wherein a second strap retractor device is attached to said second end portion of said carry strap, said second retractor device being attached to a second part of said carry case opposed to said first part.

35. The carry case according to Claim 34, wherein said first and second retractor devices are mounted to a frame structure of said carry case and concealed within respective parts of said carry case.

36. A method of providing a retractable carry strap for a carry case such as a business case, an article of luggage or the like, which comprises:

- a) providing a flexible strap having first and second end portions;
- b) attaching one first end of said flexible strap to a first retractor device, said first retractor device including resilient device to bias said first end of said strap toward said first retractor device;
- c) mounting said first retractor device on a first part of said carry case;
- d) attaching said second end portion of said strap to a second retractor device, said second retractor device including resilient device to bias said second end portion of said carry strap toward said second retractor device; and
- e) mounting said second retractor device on a second part of said carry case.

37. The method according to Claim 36, wherein said carry case has a wrap around frame structure and said first and second retractor devices are mounted to said frame structure.

38. The method according to Claim 37, further comprising concealing said first and second retractor devices within said respective first and second parts of said carry case.